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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,510

06/17/2005

Reijo Pietikainen

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551 FIFTH AVENUE

SUITE 1210

NEW YORK, NY 10176

EXAMINER

HUG, ERIC J

ART UNIT

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1791

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,510	<b>Applicant(s)</b> PIETIKAINEN ET AL.	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply:**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4, 16, 17, 22, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 16, and 17 recite "wherein the steam and the liquid required for establishing the steam atmosphere are injected from the same nozzle" (emphasis added). It is unclear how the liquid contributes to establishing "the steam atmosphere", as claim 1 merely recites that the steam atmosphere is formed by feeding steam into a blow cavity. Also, it is unclear what is meant by "injected from the same nozzle". Does this refer to where the water is mixed with the steam or where the heated water is sprayed onto the web?

Claims 22 and 26 are rejected as being dependent on claim 4.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5-9, 23, 27, 28 // 11-15 and 30-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamel (US 6,962,296).

Hamel discloses an apparatus and method for applying moisture and heat to a paper web during production on a paper machine. The method includes supplying pressurized steam to a nozzle, providing a flow of water to the nozzle, atomizing the water by the steam, and providing a mixture of the steam and fine droplets of water resulting from the atomizing to an advancing paper web. The apparatus comprises a housing having a steam outlet and a water outlet, a first nozzle in the housing for producing a stream of steam at the steam outlet, a second nozzle disposed cocentrically in the first nozzle for producing a stream of water at the water outlet in a controlled manner. The steam in the first nozzle heats the water in the second nozzle. Both steam and water are delivered from their respective nozzles as a mixture. See the nozzle module of Figure 2. Atomized water is discharged at nozzle 26 and steam is discharged at annular nozzle 78. An array of such nozzle modules are provided to deliver steam and water to several locations across the width of the paper web. See the system of Figure 1 showing a plurality of cross-direction nozzle modules 10. Figure 2 shows in detail an integrated actuator nozzle module 10.

Port 28 receives pressurized water from a water chamber 2 (Figure 1) and then feeds that water to a regulator type actuator 20. The actuator 20 regulates the water pressure and flow of water to a pair of orifices 12 and 14, and subsequently to water nozzle 26 downstream of the orifices. Steam is fed into a channel 70 through a port 30 which is in sealed communication with a common steam chamber 3 (Figure 1). Steam in the channel 70 then splits into three streams, one stream through a circumferential gap 72 around the water nozzle 26, another stream through a flat gap 76 adjacent to the nozzle exit, and another stream through two off-center orifices 86. The separated streams then mix again in a mixing chamber 74 before emitting through annulus 78 around the water nozzle 26. Steam passing in this manner effectively atomizes the water fed to nozzle 26.

Regarding method claim 1, Hamel accomplishes the claimed steps of forming a steam atmosphere and applying a spray of liquid (water) which has been heated by the steam atmosphere, hence which has been heated to a temperature higher than ambient temperature, from at least one nozzle onto a paper web. Regarding apparatus claim 11, Hamel discloses the claimed steam blow cavity open towards a moving web (channel 70 and annular nozzle 78), a nozzle (port 30) for feeding steam into the blow cavity, and a nozzle for applying a spray of liquid (water) onto the web that has been heated by the steam.

Regarding the claims dependent from claim 1--

Claim 5: The steam and water are injected from nozzles 78 and 26, respectively.

Claims 6 and 23: Pressurized (saturated or supersaturated) steam is formed in cavity 70.

Claims 7, 27, and 28: Steam (water vapor) and water are used.

Claims 8 and 9: Cross-machine direction control is implemented for temperature and amount of water. Flow valves are used for the water. Steam valves are used for temperature profiling.

Regarding the claims dependent from claim 11--

Claims 12 and 13: The nozzle of Figure 2 is a dual-channel nozzle for steam and water.

Claims 14, 30, and 31: Temperature control is controlled through a plurality of steam values arranged in the cross-direction.

Claims 15 and 32-34: The apparatus of Hamel can be used in conjunction with a calender. See column 2, lines 1-5.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 10, 18-21, 24, 25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamel. Hamel has been applied under 35 U.S.C. 102(e) to claims 1, 8, 9 above.

Regarding claims 2 and 3, Hamel does not specifically disclose the temperature of the water applied to the web after it has been heated with steam. However, it is clear from the disclosure of Hamel that the water cannot be heated to a temperature that vaporizes the water, hence it must be less than 100°C. Also, it is clear that because moisture and heat are applied to

the web, the water must be greater than the temperature of the web when it is applied. Therefore, the claimed temperatures are deemed obvious in view of what one skilled in the art would recognize as being necessary for application of heated water to a paper web in a paper machine. Further regarding claims 18 and 19, the steam and water are injected from nozzles 78 and 26, respectively. Further regarding claims 20 and 21, pressurized (saturated or supersaturated) steam is formed in cavity 70. Further regarding claims 24 and 25, steam (water vapor) and water are used.

Regarding claims 10 and 29, profiling of a web in the cross-machine direction obviously includes measuring one or more properties so that proper control of the profile can be established. Therefore, because Hamel teaches cross-machine direction profiling of both the moisture and the temperature of the web, measurements of these web properties must be taken so that the profile can be established.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 571 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eric Hug  
Primary Examiner